

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 19, 21 and 32-37 and ADD new claims 38-47, in accordance with the following:

1-18. (CANCELED)

19. (CURRENTLY AMENDED) A recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising:

a discriminator to discriminate a magnitude of a present mark of input data and magnitudes of leading and/or trailing spaces of the present mark;

a generator to control generation of a write pulse waveform in accordance with a one or more grouping tables having width data of first and/or last pulses for the write pulse waveform according to the magnitude of the present mark of the input data and the magnitudes of the leading and/or trailing spaces, ~~with the magnitude of the present mark and magnitudes of the leading and/or trailing spaces being grouped according to a short pulse group, a middle pulse group and a long pulse group;~~ and

a driver to drive a light source by converting the write pulse waveform into a current signal in accordance with driving power levels for the write pulse waveform.

20. (PREVIOUSLY PRESENTED) The recording and/or reproducing apparatus according to claim 19, wherein the generator includes:

a write waveform controller to generate pulse width data to vary a width of the first pulse of the write pulse in accordance with the magnitude of the leading space and the magnitude of the present mark and to vary a width of the last pulse of the write pulse in accordance with the magnitude of the present mark and the magnitude of the trailing space; and

a write pulse generator to generate the write pulse waveform in accordance with the pulse width data.

21. (CURRENTLY AMENDED) The recording and/or reproducing apparatus according to claim 20, wherein the write waveform controller comprises a memory in which the pulse width data of the first and/or last pulses for the write pulse waveform are stored, by grouping the magnitude of the present mark and the magnitudes of the leading and/or trailing spaces, into a

short pulse group, a middle pulse group or a long pulse group.

22. (PREVIOUSLY PRESENTED) The recording and/or reproducing apparatus according to claim 21, further comprising a microcomputer to initialize the write waveform controller and control the pulse width data stored in the memory to be updated in accordance with write conditions.

23. (PREVIOUSLY PRESENTED) The recording and/or reproducing apparatus according to claim 21, wherein the memory stores the pulse width data of the first and/or last pulses for the write pulse waveform depending on whether the input data is in a land track or a groove track.

24. (PREVIOUSLY PRESENTED) The recording and/or reproducing apparatus according to claim 21, wherein the memory stores the pulse width data of the first and/or last pulses for the write pulse waveform for respective zones on the optical recording medium.

25. (PREVIOUSLY PRESENTED) The recording and/or reproducing apparatus according to claim 20, wherein light power for a predetermined one of channels of the write pulse waveform is applied during a period corresponding to a varied width of the first pulse and during a period corresponding to a varied width of the last pulse.

26. (PREVIOUSLY PRESENTED) The recording and/or reproducing apparatus according to claim 25, wherein a light power for the predetermined channel is a read power or a write power.

27. (CANCELED)

28. (PREVIOUSLY PRESENTED) The recording and/or reproducing apparatus according to claim 19, wherein the generator generates pulse width data by varying a rising edge of the first pulse of the write pulse in accordance with the magnitude of the leading space and the magnitude of the present mark.

29. (PREVIOUSLY PRESENTED) The recording and/or reproducing apparatus according to claim 19, wherein the generator generates pulse width data by varying a falling edge of the first pulse of the write pulse in accordance with the magnitude of the leading space and the magnitude of the present mark.

30. (PREVIOUSLY PRESENTED) The recording and/or reproducing apparatus according to claim 19, wherein the generator generates pulse width data by varying a rising edge of the last pulse of the write pulse in accordance with the magnitude of the trailing space and the magnitude of the present mark.

31. (PREVIOUSLY PRESENTED) The recording and/or reproducing apparatus according to claim 19, wherein the generator generates pulse width data by varying a falling edge of the last pulse of the write pulse in accordance with the magnitude of the trailing space and the magnitude of the present mark.

32. (CURRENTLY AMENDED) A recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising:

a generator to generate an adaptive write pulse, by varying a ~~falling~~rising edge of a first pulse of the write pulse in accordance with a magnitude of a leading space and a magnitude of a present mark and varying a falling edge of a second pulse of the write pulse in accordance with the magnitude of a trailing space and the magnitude of the present mark, based on at least one table storing width data of the first and/or second pulses in a leading and/or trailing space grouping format, ~~with the magnitude of the present mark and magnitudes of the leading and/or trailing spaces being grouped according to a short pulse group, a middle pulse group and a long pulse group; and~~

a driver to drive the light source according to the adaptive write pulse.

33. (CURRENTLY AMENDED) An adaptive write pulse generating circuit, the adaptive write pulse being used for writing input data to an optical recording medium, comprising:

a write pulse inputting unit inputting a write pulse, the write pulse including a first pulse, a last pulse and a multi-pulse train;

a generator generating the adaptive write pulse, by varying a ~~falling~~rising edge of the first pulse in accordance with a magnitude of a leading space and a magnitude of a present mark and varying a falling edge of the second pulse in accordance with a magnitude of a trailing space and the magnitude of the present mark, based on at least one table storing width data of the first and/or second pulses in a leading and/or trailing space grouping format, ~~with the magnitude of the present mark and magnitudes of the leading and/or trailing spaces being grouped according to a short pulse group, a middle pulse group and a long pulse group; and~~
an outputting unit to output the generated adaptive write pulse.

34. (CURRENTLY AMENDED) A recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising:

a generator to generate an adaptive write pulse using a grouping table having width data ~~offor first and/or last~~ pulses of a write pulse waveform, ~~with magnitudes corresponding to the adaptive write pulse being grouped in the grouping table according to a short pulse group, a middle pulse group and a long pulse group according to a magnitude of a present mark of input data and a magnitude of a leading space of the present mark;~~ and

a processor to process data on a recording medium,
wherein the adaptive write pulse includes a first pulse, a last pulse and a multi-pulse train width data comprises rising edge information of the pulse.

35. (CURRENTLY AMENDED) A recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising:

a generator to generate an adaptive write pulse using a one or more grouping tables having width data of first and/or last pulses of a write pulse waveform according to a magnitude of a present mark of the input data and magnitudes of leading and/or trailing spaces of the present mark, ~~with the magnitude of the present mark and magnitudes of the leading and/or trailing spaces being grouped according to a short pulse group, a middle pulse group and a long pulse group;~~ and

a processor to process data on a recording medium;
wherein the adaptive write pulse includes a first pulse, a last pulse and a multi-pulse train.

36. (CURRENTLY AMENDED) A The recording and/or reproducing apparatus according to claim 35 ~~recording and/or reproducing data on a recording medium, comprising:~~

~~a generator to generate an adaptive write pulse using a grouping table having width data of first and/or last pulses of a write pulse waveform, with magnitudes corresponding to the adaptive write pulse being grouped in the grouping table according to a short pulse group, a middle pulse group and a long pulse group; and~~

~~a processor to process data on a recording medium,~~
wherein the adaptive write pulse includes a first pulse, a last pulse and a multi-pulse train, and is different in respective zones on the recording medium.

37. (CURRENTLY AMENDED) A The recording and/or reproducing apparatus according to claim 35 ~~recording and/or reproducing data on a recording medium, comprising:~~

~~a generator to generate an adaptive write pulse using a grouping table having width data~~

~~of first and/or last pulses of a write pulse waveform, with magnitudes corresponding to the adaptive write pulse being grouped in the grouping table according to a short pulse group, a middle pulse group and a long pulse group; and~~

~~a processor to process data on a recording medium,~~

wherein the write pulse waveform is based on whether input data is in a land track or a groove track.

38. (NEW) The recording and/or reproducing apparatus according to claim 19, wherein, in at least one of the one or more grouping tables, magnitudes corresponding to the present mark and magnitudes of leading and/or trailing spaces are grouped according to a short pulse group, a middle pulse group and a long pulse group.

39. (NEW) The recording and/or reproducing apparatus according to claim 32, wherein, in the grouping format, magnitudes corresponding to the present mark and magnitudes of leading and/or trailing spaces are grouped according to a short pulse group, a middle pulse group and a long pulse group.

40. (NEW) The recording and/or reproducing apparatus according to claim 33, wherein, in the grouping format, magnitudes corresponding to the present mark and magnitudes of leading and/or trailing spaces are grouped according to a short pulse group, a middle pulse group and a long pulse group.

41. (NEW) The recording and/or reproducing apparatus according to claim 34, wherein, in the grouping table, magnitudes corresponding to the present mark and magnitudes of leading and/or trailing spaces are grouped according to a short pulse group, a middle pulse group and a long pulse group.

42. (NEW) The recording and/or reproducing apparatus according to claim 35, wherein, in one or more of the one or more grouping tables, magnitudes corresponding to the present mark and magnitudes of leading and/or trailing spaces are grouped according to a short pulse group, a middle pulse group and a long pulse group.

43. (NEW) A recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising:

a generator to generate an adaptive write pulse comprising a pulse with a variable pulse width, with the pulse width being varied according to a magnitude of a present mark of input data and a magnitude of a leading space of the present mark; and

a processor to process data on a recording medium.

44. (NEW) The recording and/or reproducing apparatus according to claim 43, wherein the pulse width is varied by varying an edge placement of the pulse, including varying a rising edge placement of the pulse based on the magnitude of the present mark and the magnitude of the leading space of the present mark.

45. (NEW) The recording and/or reproducing apparatus according to claim 44, wherein a pulse width of another pulse of the adaptive write pulse is varied by varying an edge placement of the other pulse, including varying a falling edge of the other pulse according to the magnitude of the present mark and a magnitude of a trailing space of the present mark.

46. (NEW) The recording and/or reproducing apparatus according to claim 43, wherein the pulse width is varied by varying an edge placement of the pulse, including varying rising and/or falling edges of the pulse according to the magnitude of the present mark and the magnitude of the leading space and/or a magnitude of a trailing space of the present mark.

47. (NEW) A recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising:

a generator to generate an adaptive write pulse comprising a pulse with a variable pulse width, with the pulse width being varied according to a magnitude of a present mark of input data and a magnitude of a trailing space of the present mark; and

a processor to process data on a recording medium.